THE VETERINARY RECORD

A Weekly Journal for the Profession.

Edited by WILLIAM HUNTING, F.R.C.V.S.

No. 866. FEBRUARY 11, 1905. VOL. XVII

NEW SHEEP-SCAB REGULATIONS.

The Board of Agriculture have issued new regulations for the stamping-out of sheep scab. We use the term "stamping-out," and not the word control, because we believe the regulations are directed to the larger end—and we think they are capable of reaching it if properly enforced.

The Board have ignored the suggestion for general compulsory dipping. It was impracticable. If it could be adopted a good deal more than eradicating scab would have been achieved. There are a number of injurious parasites on sheep that dipping would destroy, and intelligent sheep-owners will dip their sheep voluntarily even though they are not affected with scab.

The new regulations take the form of three different Orders, and one can but admire the tact which divided the necessary measures in this way. It enables the Board to use one Order, which is an improvement on the Order of 1898, for general purposes, then by a second to provide more drastic regulations for any specially infected areas, and yet another to help by special regulations those local authorities who are willing to work. The first Order is always in force everywhere—the second is limited to the dirtiest districts—the third is for use when wanted, and so Local Authorities can be pleased all round.

The Sheep Scab Order of 1905 revokes the Order of 1898, from which it differs only in some details. It provides for notification by the owner, immediate attendance and examination by an inspector, and then an enquiry by a veterinary inspector. The lay inspector, who is generally a policeman, has the power to detain all sheep on the place until the veterinary inspector has examined and reported.

If the disease exists the detention Order is only withdrawn on the local authority being satisfied by their veterinary inspector that the sheep are cured and have been thoroughly dipped in an efficient dip.

A power given by the new Order which did not exist is the detention of sheep which have been in contact with diseased sheep.

As in the old Order, provision is made for disinfection, prohibition of movement, etc.

The old Order gave power to a local authority to prohibit the movement of sheep into their district from another. This is now altered, and dipping is enforced in the district receiving the sheep.

One more very important difference is noticeable in the new Order, *i.e.* the use of the term "efficient" as applied to dips. No dipping will be acknowledged by the authorities unless effected with a dip approved by the Board. Of course all the well known dips will be approved, and doubtless some useless preparations will be detected and forbidden. In a schedule to the Order prescriptions are given for making dips: with (1) lime and sulphur; (2) carbolic and soft soap; and (3) tobacco and sulphur.

This Order is the one which will be in force generally and be applied to all outbreaks.

The Compulsory Dipping Area Order is a more radical regulation which only comes into force when the Board of Agriculture find that scab prevails constantly or widely in a district or area. It will probably be applied to some parts of Wales and Scotland as soon as the Board find that sheep-owners in those districts will not clear their own flocks, under the provisions of the general order. In these areas sheep-owners must declare the number of their sheep, must adopt periodical dipping, and will suffer prohibition of movement out of the district except under special regulations.

The third Order is one which applies to the districts requiring a little more looking after than is provided by the general Order. It may be applied by the Board in a district where disease prevails and where the authorities are lax, or—as is more likely to be the case—where an authority are willing to accept and carry out the regulations with earnestness and stringency.

With the three Orders a Circular has been sent to all Local Authorities explaining the various powers of the different Orders. It is signed by Sir Thomas Elliott and is an admirably lucid document.

The chief duty of a veterinary inspector under these Orders is diagnosis of the disease. This is by no means always an easy task, and in some cases it would be rash in the extreme to say a flock was not infected with scab until sufficient time had elapsed to allow of development. To detain healthy sheep and cause an owner to lose a market is a serious thing. To permit movement of an infected flock, and thus spread disease among others, is even more serious. We sincerely trust that these new regulations which come into force in April next, and will entail more work on veterinary practitioners and inspectors, will not lead to misunderstandings and contradictions such as not long ago caused discredit and disunion in a district not free from sheep-scab.

"Careful observation makes a skilful practitioner but his skill dies with him. By recording his observations he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of Pathological Science."

INTERNAL ADMINISTRATION OF FORMALDEHYDE BY INTRA-VENOUS INJECTION.

I was induced to try the internal administration of formaldehyde by the fact of its possessing such powerful antiseptic properties, and my results are such as to lead one to, at any rate, hope that it may eventually prove to be a useful, if not valuable, medicament for some diseases. I first used this in connection with diseases of the chest—those which are fairly generally recognised as contagious and of microbic origin. But I only propose relating its use upon three cases of purpura hæmorrhagica. I consider the percentage of fatalities in purpura, whatever be the causal agent and its mode of origin, warrants one using a medicament possessing such great astringent as well as antiseptic properties. I am unable to say that formaldehyde remains as such when in the blood stream, indeed one would expect otherwise, rather its transformation into formic acid by acting as a reducing agent, and the consequent formation of formates. But this is all speculation.

The dose has in each of the three cases of purpura been ʒi. of 40 per cent. solution of formaldehyde in water, and only one injection was given on the first day. Cases I. and II. received ʒi. of the above in ʒxx. of tepid distilled water, and Case III. ʒi. in ʒv. The solution in either case appears to be strong when one has seen the enormous astringent properties this agent possesses, but these strengths are perfectly harmless if the injection is direct into the vein and not into the subcutaneous tissues. If any of the injection should fail to reach the lumen of the vein and it is, unfortunately, of rather common occurrence for this to happen, since the slightest movement causes the vein to slip off the needle—a swelling ensues, dependent in size upon the amount of the solution. But I have never seen sloughing, abscess formation, or occlusion of the vein where I missed the vein with a little of the injection.

Case III. was treated about 21 months ago, has had good health and done regular hard work since. I may say the same of the other two though these have been treated more recently. Repeated examinations have convinced me that nothing is to be found amiss with the hearts and lungs of these horses, though I have never yet had the chance of a post-mortem after this treatment.

Three cases of a disease are not sufficient to permit one to form a definite opinion, but I must say that I never expected cases I. and II. to recover, and that I have never previously seen such bad cases of purpura make such consistently progressive recovery. Of course it may be that this treatment has not the faintest curative action, but three consecutive recoveries warrant its use upon a fourth.

Case I.—Purpura (after influenza). Medium sized pair horse goods van gelding. Received on 1st day ʒi. in ʒxx.

1st day.—Pulse 72, temp. 102·2. Nose very much swollen, slightly noisy nasal respiration, visible nasal mucous membrane of both sides quite purple, skin of both quarters and one side of the body covered with small swellings about the size of half chestnuts and half hazel nuts, near fore arm and both hind legs showing large typical purpura swellings, great general weakness.

2nd day.—P. 60, temp. 101·2. Swelling on nose slightly more extensive in area, but edges of demarcation becoming less defined, those on the legs also becoming less defined in outline, the small swellings on body fewer and those in existence smaller, nasal membrane as on previous day, slight swelling at seat of injection to be felt.

3rd day.—P. 56, temp. 101·2. Nose less, swellings on body still fewer, legs perceptibly diminishing in size, nasal membrane brighter in colour, swelling at seat of injection increasing in size, fair appetite.

4th day.—P. 56, temp. 101·1. Notes to-day are as previous day, except that nasal membrane is blotched in red.

5th day.—P. 52, temp. 100. Legs becoming finer, nostrils blotched but of a lighter colour, swelling on head nearly disappeared, that at seat of injection the same—about three inches by two.

6th day.—P. 50, temp. 100. Swellings all diminishing, good appetite, nasal membranes ecchymosed.

7th day.—P. 48, temp. 100. Nose nearly normal, nasal membrane only slightly ecchymosed.

8th day.—P. 44, temp. 99·8. Still improving.

9th day.—P. 42, temp. 100. Legs normal, except for some "filling" about fetlocks, good appetite.

10th day.—Continuous improvement.

27th day.—Slight swelling on neck, it is diffuse, not easily seen, but apparent to the touch. Light work.

Case II.—Purpura (no known previous disease). Medium sized pair horse goods van gelding. Received on 1st day ʒi. in ʒxx. Pulse 60, temp. 103. Both hind and off fore legs much swollen, nasal membrane of both sides blotched in purple, localised swelling on outside of near forearm, and also one on the outside of off hind leg below the stifle.

2nd day.—P. 60, temp. 102. All symptoms about the same.

3rd day.—P. 52, 101. Swellings less, just a little appetite.

4th.—P. 48, temp. 100. Gradual improvement in every way, some appetite, henceforth no recurrence of any symptom, never any swelling at seat of injection.

Case III.—Purpura (after strangles). Small sized, pair horse goods van gelding. Received on 1st day ʒi. in ʒv. Pulse 56, temp. 102 Off hind leg, prepuce, and lower surface of abdomen greatly swollen, nasal membrane, blotched, especially near side.

2nd day.—P. 52, temp. 101·5. Swellings and

symptoms generally as on previous day, slight swellings at point of injection.

3rd day.—P. 48, temp. 101. Swelling at point of injection increasing (three inches by two), purpura swellings diminishing, appetite fair.

4th day.—P. 44, temp. 100. Improvement marked, and was continued without interruption in any way. The swelling at seat of injection diminished slowly in size until at the end of a month it could be felt as a slight diffuse thickening over the vein, but could with difficulty be seen.

HARRY LOMAS, M.R.C.V.S.

7 Ordnance Road, N.W.

RUPTURE OF THE STOMACH.

By J. ALEX TODD, M.R.C.V.S., Worthing.

Apropos. Mr. Wallis Hoare's interesting note on the above in *The Veterinary Record* of the 28th. ult., the following may be of some slight interest.

I was called just before midnight on August 20th. last to attend a brougham horse (aged) the property of a local medical practitioner. The animal had done his usual work during the day and had been fed as usual. About 10. 30. p.m. he commenced to shew colicky pain; a colick draught was given but seemed to have no effect. On arrival I found the animal in a loose box, standing up and shewing slight uneasiness. The pulse was fairly full and strong, respirations quiet, and temperature 101 3-5ths. The usual anodyne remedies were prescribed and administered per mouth and hypodermically at intervals from then on.

The uneasiness continued despite these, and the animal would move forwards for a few steps, then gently back until his buttocks touched the wall. He would lean back for a few minutes quite steadily, then repeat the above movements over and over again.

I told the owner that I suspected some internal injury, probably a rupture or partial rupture of some organ well forward, but that I could not locate it exactly. I saw the patient frequently during the next (Sunday) morning and found him to remain in practically the same condition. Once only did he carefully lie down, remaining fairly quiet for a few minutes. When he rose the forward and backing movements were repeated until about 2 p.m. when he fell forward and died.

During the fourteen hours or so of the illness, the animal *never* shewed acute abdominal pain, the temperature *never* exceeded 102°. There *never* was any attempt at vomition. There was no salivation, and *perspiration existed only in the region of head and neck.*

Post-mortem examination shewed a quantity of ingesta free in the abdominal cavity and a rupture of the stomach wall, along the greater curvature, some six inches in length.

The ecchymosed and swollen appearance of the lips of the rupture and the brownish red colour in the vicinity shewed, to my mind, that the lesion had been in existence for some considerable time previous to death.

The stomach and portion of liver was forwarded to the Clinical Research Association, Ld., for examination. They reported "an extensive area of post-mortem digestion but no true ulceration . . . ." "The contents adhering to the stomach walls, and the portion of liver were tested for the presence of metallic irritant poisons, (mercury, arsenic, antimony and oxalic acid), but none of these could be detected."

VETERINARY SURGEONS IN JAPAN.

Previous to the Restoration, the only "Veterinary Surgeons" in the "Land of the Rising Sun," consisted of the horse and cattle dealers, who in addition to buying and selling animals, used to apply the "needle treatment" and other simple methods to the animals from time to time. The first step towards the introduction of the science and practice of the Western veterinary surgery was the engagement some fifty years ago of a veterinary surgeon from the French Army, who was given the post of veterinary surgeon to the Mikado's Army. This branch of surgery was further helped by the Imperial Government, who established schools of agriculture, where instruction was given to students.

Up till 1885 there were about 6000 men who were allowed to practice veterinary surgery, by virtue of their previous experience, but in 1890 the Government stopped the issue of licenses to this class of man, and since this date none have been issued except to students who have passed a regular examination, or who have passed through the veterinary surgery class at the Government public or private schools, and in the last case only those of officially approved standing. At the last official return 2545 regular licenses had been issued, while provincial licenses were held by 1713 people. It should also be mentioned that the Minister of Agriculture and Commerce has power to grant a license of a limited period to those who are judged to possess sufficient experience, This is, however, only done on the special recommendations of local Governors, in whose districts the number of veterinary surgeons is considered insufficient.

With reference to the veterinary surgeon of the Army, applicants must in all cases come under one of the three following heads:

(1) Students of veterinary surgery in the College of Agriculture, or of the practically veterinary class at the College, who have gone through the whole of the prescribed course.

(2) Graduates of the College of Agriculture, or of foreign schools of similar standing.

(3) One-year volunteers possessing veterinary surgeons' licenses.

FARRIERY.

The practice of shoeing horses was first introduced into Japan at the same time as the science of veterinary surgery, prior to this it was totally unknown. As in veterinary surgery, a regular examination now exists for granting licenses to farriers; these are only granted to those who have passed the examination or graduated from the course of

farriery at a Government or public school, or at a private school of officially approved standing, either at home or abroad. Those who have passed the examination of a veterinary surgeon's license are also entitled to a farrier's license. The official returns show that 2948 persons possess regular licenses in this section, and 730, provisional licenses only.

Foremen of farriery for the Imperial Army are taken from those who are not on the active or reserve force of the Army or Navy, and who have graduated from the farriery course at a veterinary surgery school, or from among the farriers of the cavalry or artillery who have been judged equal to the non-commissioned officers, who have passed the required course.

E. T. S. R.

THE ECONOMICS OF FEEDING DRAUGHT HORSES.

By Prof. H. A. Woodruff, R.V. Coll., London, N.W.

Read at the meeting of the Central Veterinary Society at Red Lion Square, on Thursday, Feb. 2.

In considering this subject it may be well to briefly discuss the physiology of feeding before proceeding to deal with the practical details of ration-fixing. The food of an animal is necessary for the purpose of building up the tissues and organs during growth, for making good their waste due to wear and tear, for keeping up the body temperature, and for supplying the necessary energy both for the vital functions and for any external work the animal may be required to do. For the purposes of growth and repair—since all the tissues and constituents of the body are subject to wear and waste—food must necessarily contain all the chemical elements which are normally found in the body, and not only so but to be useful these elements must be supplied to the animal in the form of complex organic compounds. A plant, by reason of the energy it derives from the sun, can take in and assimilate simple inorganic substances such as carbondioxide and water, salts, such as sodium nitrate, and build them up into complex organic bodies, but an animal has no such power. It requires the finished products of the plant economy as its raw material and can make no use of the simple substances which serve as the food of plants.

Of all the elements necessary in a complete diet the most important are carbon, hydrogen, oxygen, and nitrogen, and of these oxygen is chiefly required in the free or uncombined state, and is taken in by the lungs. The other three are supplied in food chiefly in the form of proteids, fats, and carbo-hydrates. On analysis foods may be found to consist of certain proximate principles, viz., water, nitrogenous compounds, fats, carbo-hydrates, indigestible fibre, and salts. Of these, the first requires no special mention; the salts—mineral matter or ash—are essential constituents of the body tissues, they assist digestion, and some of them, such as the phosphates, are especially useful in young growing animals, but they give rise to no production of energy in the system.

The indigestible fibre, consisting of cellulose and its various modifications, such as lignin, is not only useless itself, but since it forms chiefly the cell walls of the plant substance, it encloses and prevents the digestion to a greater or lesser extent of other soluble constituents. In fact, the digestibility of a food by the horse may be said to vary inversely as the amount of cellulose and fibre present.

The nitrogenous constituents of a food occur in one of two forms, either as proteids or albuminoids, or as amides. The proteids or albuminoids, sometimes called flesh-formers, are essential constituents of a diet, because besides being broken down in the body and so giving up heat and energy, they are the only constituents of food which can build up and repair the muscular tissue which has been subjected to the wastage and wear and tear of work. After digestion these bodies are assimilated, *i.e.*, they are incorporated with the proteid tissues of the body (in the case of an animal neither gaining nor losing weight) to the same extent as these proteid tissues have been broken down by wear and tear, and it is this amount of albuminoid matter which must be supplied in food. Broken down proteid tissue is not oxidised to its simplest form, but splits into several bodies the ultimate products of which are carbondioxide, water, and urea the latter (containing practically all the nitrogen of the food) being excreted by the kidneys. The amount of urea excreted is therefore an index to the amount of proteid decomposition (about one-third) which has taken place in the body and so determines the quantity of digestible proteid which the food must contain. The amides in food are much simpler bodies (*e.g.*, urea itself is an amide $CO\left\{\begin{matrix}NH_2\\NH_2\end{matrix}\right.$) and can, on oxidation, give rise to a certain amount of heat and energy—but they have no power of building up or repairing waste in muscular tissue. These chiefly occur in unripe immature plants, and it is important that the percentage of nitrogenous matter in this form should be stated when the analysis of a food is given. Of the other proximate principles in a food the carbo-hydrates, consisting of starches, sugars, and soluble cellulose, are made up of carbon, hydrogen, and oxygen. They supply heat and energy on being broken down and may, if given in excess, be deposited as fat. The fats, also made up of the same three elements, require much more oxidising to split them into their ultimate products—carbon dioxide and water—and therefore give rise to a proportionately greater amount of heat and energy. Both fats and carbo-hydrates are excreted chiefly by the lungs in the form of CO_2 and H_2O, and the whole of their potential energy is given up to the body.

Thus in feeding an adult working horse, the diet must be so arranged as to supply (1) the necessary amount of albuminoid matter to make good muscular waste, and (2) sufficient albuminoid, fat, and carbo-hydrate to provide for maintenance of body heat, for energy for carrying on the vital processes—circulation, respiration, digestion, etc.—and for the production of useful external work, with at the same time the least waste and at the lowest cost.

In order to arrange such a diet it is necessary to know:—

1. The chemical composition of foods.
2. The heat and energy value of the nutritive constituents.
3. The digestibility of the constituents in each food.
4. The maintenance requirements of the animal at rest.
5. The working requirements of the animal, and the most suitable balance of the digestible nutritive principles.
6. The comparative cost of various foods.

The Chemical composition of the various food stuffs of course varies with the sample, with the season, the land, the weather at harvest, and the conditions and duration of storage, but taking a good sample of the food its chemical composition will be sufficiently near the composition given in any of the standard analytical tables for all practical purposes. Such tables may be found in Warrington's "Chemistry of the Farm" (a book to which I am much indebted), or in "The Feeding of Animals," by W. H. Jordan. In the case of one

staple food for horses—hay—the time of cutting, or in other words the ripeness of the crop, has an important bearing on its composition and digestibility as the appended analyses will show (Table I.) Thus grass cut when too ripe not only contains less proteids and more fibre, but is much more indigestible and therefore uneconomical.

TABLE I.

COMPOSITION OF HAY CUT AT DIFFERENT TIMES.

When cut	Albumenoids.	Percentage digested.	Amides.	Fats.	Percentage digested.	Soluble Carbo-hydrates.	Percentage digested.	Fibre.	Percentage digested.	Ash.
May 14th	11·5	73	6·2	3·2	65	40·8	75	23	79	15·3
June 26th	7·8	55	0·7	2·7	43	43·3	56	38·2	61	7·3

NOTE variation in Amides, in Fibre, and in Digestibility.

Heat value of Constituents.—As we have seen, for nutritive purposes the important constituents of a diet are the proteids, fats, and carbo-hydrates. For maintenance and repair of muscular tissue proteid is indispensable, whilst for the purposes of producing work and energy the three constituents are all useful, but have widely different values. The only satisfactory way to estimate the work value of a food is to find the heat-producing power of these three main constituents, for there is a direct relation between the amount of heat they will produce on being burnt and the amount of energy or labour they will give rise to after assimilation by an animal. By experiments many times repeated it has been found that, when burned in a calorimeter, equal quantities of fat, proteid, and carbo-hydrate produce heat in the proportion of 2·3, 1·25, and 1 respectively.* In practice these comparative heat values are found to be true so far as the maintenance diet of an animal is concerned, but for labour purposes proteid and carbo-hydrate are found to be of a similar value, so that the proportion becomes 2·3, 1, 1.

Digestion of Various Constituents.—Another most important question with regard to the nutritive value of a food is its digestibility. This is found to vary greatly in the different species, and, even in one species, to vary for the different constituents of the food. In other words, the percentages of proteid, fat, and carbohydrate digested by a given animal are not equal, nor are they the same in all foods, but rather differ in each food given. The digestibility can be determined to some extent by two methods :—

(1) By artificial digestion outside the body.

(2) By analysing and weighing the food, and also all the excreta of an animal of known weight, and calculating from these data the amount of food absorbed into the system.

The first method consists in submitting the food to artificial digestion in a flask with the various digestive ferments—gastric juice, pancreatic juice, etc. Although it does furnish a good deal of useful information it is not of much practical value in determining the digestibility in the living animal. The second and more practical method was adopted and worked out in cattle and sheep by Lawes and Gilbert on the experimental farm at Rothamstead. Since then many scientific workers have made careful investigations on horses, notably Wolff, and more recently Züntz, in Germany, and also Atwater and Rosa in the United States.

Lawes and Gilbert analysed and weighed various foods and then by weighing and analysing the fæces and urine they found what percentage of carbohydrate, fat, and nitrogenous matter had been digested and how much was waste material. But there were many experimental errors in this method and the results obtained left much to be desired. In one important particular no information was furnished as to the food used up in supplying energy for the digestive processes. A steam pump may be required to fill a reservoir with water, but it must first be supplied with water for its own boilers ; and similarly the digestive apparatus which makes possible the passage of food into the blood stream, must itself be fed before it can work. Moreover the energy used in digesting the food is obviously lessening the total energy which that food will set free for the purposes of useful external work, so that a food which requires much energy for its own digestion becomes of little value for producing work in the animal. Zuntz, recognising that food only gave rise to force or energy when it was oxidised, used a respiration chamber in which he was able to measure the exact amount of oxygen taken in by the animal, as well as the amount of CO_2 and H_2O given out. He also weighed and analysed both the food and the excreta, and by these means he got a complete statement of the income of food and oxygen, and the output of waste products. Thus he was able to calculate the degrees of digestibility of various foods. He found, too, that the amount of oxygen inspired in a given time varied greatly depending on the particular food which was being digested, and further that the amount of oxygen required during digestion of a food afforded an index as to the amount of energy which was being expended on its digestion. Thus in the case of wheat straw, when fed to horses, he found that by its composition and degree of digestibility the heat and energy from 100lbs. of it ought to be equal to that from 18·1 lbs. starch, but that the energy used up in the process of digestion was equal to that from 29·7 lbs. starch, so that instead of the animal gaining power available for useful work there was in fact a net loss of energy equal to that in 11·6 lbs. starch for every 100 lbs. of straw fed.

TABLE II.

HEAT USED UP IN THE PROCESS OF DIGESTION (ZUNTZ.)

(*a*) By composition and digestion } 100 lbs. wheat straw are equivalent to 18·1 lbs. Digested Starch.

Energy used up in digesting 100 lbs. wheat straw is equal to that in 29·7 lbs. digested starch.

*** For every 100 lbs. wheat straw fed there is a *net loss* of energy equal to the energy supplied by (29.7—18·1) *i.e.*, 11·6 lbs. Digested Starch.

Another example which illustrates this point is the comparative quantity of heat used up in digesting 1lb. each of hay, oats and maize, viz., 76, 21, and 6 1-3rd calories respectively. This important item was determined for many foods, and it is plain how necessary such knowledge is.

(*b*) In digestion of 1 lb. of Hay, " " " " " Oats, " " " " " Maize } heat used up is { 76 Calories, 21 ", 6⅓ "

One factor was still omitted from Zuntz's earlier work namely the percentage of all the heat derived from the food (1) used by the animal for keeping up the body temperature ; (2) lost by radiation from the skin ; and

* *Note.*—Proteid really produces more heat than this in a calorimeter, but a deduction has been made equivalent to the heat-producing power of the urea excreted.

(3) available for work. In an engine, of the total evolution of energy, it often happens that only 10 per cent. is available for actual work, the rest being dissipated in the form of heat or of friction. Similarly in an animal only a proportion of the energy from food is available for external work, the major part being used up in carrying on the vital processes, in keeping up the body temperature, in raising the temperature of water and food taken in, and in waste heat radiated from the surface of the body. By using a respiration chamber which was at the same time a calorimeter—in which the heat given off from the body could be estimated, Atwater and Rosa were able to calculate the net value of useful energy provided by the consumption of the various foods. Thus we see that the problems involved in studying the question of feeding are neither few nor unimportant, and it is for us to take advantage in daily practice of all the useful knowledge which has been obtained by these very valuable investigations.

"*Maintenance Diet.*"—We have seen so far that a certain quantity of food is necessary purely for the maintenance of the animal even when at rest—to keep it warm and to provide for the carrying on of the vital processes—this is called the maintenance diet. As a result of many experiments by different observers it is generally agreed that the daily amount of food for a horse weighing 1000 lbs. should be equal to 7lbs. of digestible starch, provided that the diet does not contain too much indigestible fibre (not exceeding a total of 3lbs. fibre.—Zuntz.) "Grandeau found, with Paris cabhorses, that a cabhorse weighing 1000lbs., with only half an hour's walking exercise a day, required from 7·0 to 7·8lbs. digestible organic matter (got from about 20lbs. of hay) and including 0·45lbs. proteid to maintain its condition." The statement has already been made that the urea excreted in the urine is an index to the amount of proteid used in the body and therefore to the amount required in food. The urea excreted in 24 hours by the horse is about 3½ ounces, and therefore the amount of proteid broken down is about 10 ounces, which amount must be supplied in the food.

Balance of the Constituents in a Diet.—Not only is it necessary to have the above minimum amounts of nutrients in the ration for a resting horse, but if any work is required of the animal a proportionate extra quantity of food has to be supplied in order to provide the necessary energy. At first sight it might appear that any one of the three nutritive constituents of food might be used alone in sufficient quantity to supply this extra energy, but in practice it is found that a certain balance must be kept between the proteid, fats, and carbohydrates. The balance or ratio varies with different animals and for different purposes, but any other than the optimum nutritive ratio is bound to be uneconomical. If the balance is upset the percentage of each food digested at once alters, *e.g.* if the percentage of proteid is too low, the digestion of proteid per 100 parts supplied in the food falls off and so the nitrogenous part of the diet, the most costly part, is subject to greater waste. Again if the quantity of proteid is too great, the appetite for it increases, the animal puts on flesh and extravagance occurs. To determine the right proportion in which to supply these nutritive elements in food we may proceed in two ways: (1) by studying this relation in the natural food of animals, and by seeing how the relation varies with the varying circumstances of the animal's life; and (2) by experimentally determining the best balance for any particular purpose; and since the performance of work is unnatural, so that we can get little or no information from nature at all comparable to working conditions, the latter method is the better. In the feeding of young animals, foals and calves, we can use the former method with great advantage by analysing their natural food, milk, although the deductions from this do not concern us at present. The ratios which we require to know are termed the "nitrogenous ratio" and the "fatty ratio,"* and of these the first is greatly the more important. The nitrogenous ratio is a statement of the amount of digestible proteid matter compared with the amount of carbohydrate and fat, but since fat and carbohydrate have different values in the production of heat and work they must first be reduced to a similar value, *i.e.* the fat must be stated in terms of its equivalent of carbohydrate. To do this the percentage of digestible fat is multiplied by 2·3.

In the case of milk this ratio is about 1 : 3, or in other words the quantity of proteid required in the food of young growing animals is very high. For mere maintenance of an adult horse it need be not more than 1 : 10. For labour the proportion varies with the severity of the work, *e.g.* for an agricultural horse at slow farm work a ratio of 1 : 8 will suffice; whereas for severe work at a fast pace, say a trapper in London, or a dray horse working at a trot, the ratio needs to be 1 : 5·5 or 1 : 6. As before stated, any other than the optimum ratio for the particular work means waste and loss in the diet.

The fatty ratio is much less important, and is simply a statement of the percentage of fat compared to that of the proteids. It is of advantage that this should be within the limits 1 : 2 and 1 : 3·5, in a diet for a horse at hard work.

Food requirements for work.—Next has to be considered the total quantity of food necessary Of course this must depend on the kind and amount of work and the size and weight of the horse, but many investigations have been made both by means of experiments and in actual practical working, and observers have come to agree fairly well as to the requirements of a horse at hard and at moderate work. We may take as the standard requirements for a horse of 1000 lbs. weight the buantities given in the table and suggested by Wolff.

TABLE III.

STANDARD REQUIREMENTS (WOLFF).

For a horse weighing 1000 lbs.

	Total Organic Matter.	Digestible Proteids	Digestible Carbohydrates.	Digestible Fats.	Nitrogenous Ratio.
At severe work	25·5lbs	2·8lbs	13·4 lbs	0·8lbs	1:5·5
At moderate work	20·5 „	1·8 „	11·2 „	0·6 „	1:7

For a horse weighing 900 lbs. these figures become

At severe work	23 „	2·5 „	12·0 „	0·7 „
At moderate work	18·5 „	1·6 „	10·0 „	0·55„

Time forbids me to detail all the conditions of working which require some change in the total weight of food, but it must be pointed out that speed is a most important factor, because the force exerted increases, not directly as the speed, but much more quickly. "Grandeau found that 19·4 lbs. hay kept a horse in condition when he was walked 12½ miles—but 24 lbs. was insufficient when he trotted the same distance." Zuntz

*The "*Nitrogenous Ratio*" $= \frac{N}{F + CH}$ or better $\frac{N}{(F \times 2{\cdot}3) + CH}$

The best ratio for fast hard work is 1 : 5·5 or 1 : 6.
„ „ „ „ slow farm „ „ 1 : 8.

The "Fatty Ratio" $= \frac{F}{N}$

The best ratio is between 1 : 2 and 1 : 3·5.

(Where N = percentage of proteid digested, F = percentage of fat digested, and CH = percentage of carbohydrate digested.)

proved the effects of speed by experiments in the respiration chamber and found that the food needed per unit of work increased nearly 70 per cent. in increasing the speed from three to seven miles per hour. Thus it is of great importance that the food and the speed required of the animal should be considered in relation to one another, and it must be remembered that work at a slow pace, where possible, is much more economical than fast work, so far as consumption of food is concerned.

Comparative cost of various foods.—But now arises the important question of cost. If a ration is too expensive, can we substitute an equally useful and productive food for less money? We have seen that various foods differ greatly in composition, in digestibility, and in heat and work producing power, and in estimating their monetary value three various factors must be taken into account. For this purpose a table may be constructed showing composition, percentage digested, heat units provided, market price, and so the price per 100 heat units; and we may thus gain some idea of the relation between money value and benefit to the horse. Like all other tables applied to foods, this is to be used only as a guide; it is open to many objections, but it does offer a valuable indication, and if used along with some knowledge of the combination of food-stuffs, and of the practical side of feeding, will show how foods may be most economically employed.

Summary.—It will be apparent to anyone who has followed this paper so far, that the arrangement of a diet on sound principles and at the least cost requires a good deal of consideration, and it may be well, in conclusion, to briefly summarise the whole. We have seen that a properly regulated diet must contain in suitable proportions all the elements which are found in the animal composition; that these elements must be supplied in the form of complex unstable compounds which have been built up by plant activity; and that for keeping up the general condition and for producing work and labour power the important compounds are proteids, fats, and carbo-hydrates. We have further noticed that the relative powers these substances have of producing work are proportional to their heat-producing capacity when burned, and that if we can determine the percentage of each digested from a food, we may then state the value of that food in providing force and energy. An animal even at rest requires, as we have seen, an amount of food—the maintenance diet—containing proteid sufficient to supply the waste and wear and tear of the body

TABLE IV.

COMPARATIVE COST.

Food.	Proteids: Amount in 100 lbs.	Proteids: Digestion co-efficient.	Proteids: Amount digested from 100 lbs.	Carbohydrates: Amount in 100 lbs.	Carbohydrates: Digestion co-efficient	Carbohydrates: Amount digested from 100 lbs.	Fats: Amount in 100 lbs.	Fats: Digestion co-efficient.	Fats: Amount digested from 100 lbs.	Fats: Heat producing power	Total heat power.	Price per 100 lbs.	Price for 100 heat units
Peas	22·5	88	19·8	53·7	93	49·9	1·6	7·5	·012	.027	69·7	at 30/- per 38 stone 5/7½	8/1
Oats	11·3	86	9·7	57·3	74	42·4	5·4	71	3·83	8·81	60·9	22/- per quarter 7/-	11/6½
Maize	10·4	78	8·11	70	94	65·5	5·1	63	3·21	7·38	81·3	25/- for 480 lbs. 5/2½	6/4½
Barley	10·6	70	7·42	66	90	59·4	2·1	70	1·47	3·38	70·2	20/- for 400 lbs. 5/-	7/1½
Bran	14·1	78	10·99	56	74	41·4	3·7	60	2·22	5·11	57·4	11/- per cwt. 9/9½	17/1
Hay	12·0	62	7·44	39·5	57	22·5	2·3	20	·46	1·06	31	£3 10 0 per ton. 3/1½	10/1
Oatstraw	4·0	30	1·2	37	40	14·8	2·0	25	.5	1·15	17·15	£2 10 0 per ton. 2/3	13/-

TABLE V.

L.C.C. TRAM-HORSE RATION.

(*a*)

Food.	Proteids: Amount digested.	Proteids: Heat producing power.	Carbohydrates: Amount digested.	Carbohydrates: Heat producing power.	Fats: Amount digested.	Fats: Heat producing power.	Total heat producing power.	
2 lbs. Peas	·396	·396	·998	·998	·00031	·00713	1·401	Nitrogenous Ratio
4 lbs. Oats	·389	·389	1·696	1·696	·1532	·35236	2·437	1 : 5·12
8 lbs. Maize	·649	·649	5·264	5·264	·2568	·59064	6·503	
1¼ lbs. Hay	·856	·856	2·587	2·587	·0529	·12167	3·565	
1½ Oat straw	·018	·018	·222	·222	·0075	·01725	·257	
TOTAL.	2·308		10·767		0·4707		14·163	

(*b*) When substituting 2 lbs. Barley for 2 lbs of Oats

Gain in added 2lbs. Barley	·1484	·1484	1·198	1·198	·0294	·0676	2·749	Nitrogenous Ratio
Loss in deducting 2lbs. Oats	·1945	·1945	·848	·848	·0766	·17618	1.2187	1 : 5·3
	·0461 Loss		·35 Gain		·0472 Loss		1·53 Gain *	

* NOTE.—There is a net gain of heat, and Nitrogenous Ratio is still good.

activities, chiefly muscular action, involved in circulation and respiration, and containing sufficient fat and carbo-hydrate to keep up the body temperature and to supply energy for these same vital processes.

But for external work this quantity of food must be largely increased, and that in proportion to the work required. Not only so, but to secure economy of use and of digestion, the three main constituents of the food must be well balanced and have a suitable proportion of nitrogenous matter to fat and carbo-hydrate—in other words a good nitrogenous ratio.

Then lastly, we have seen that the real value of a food may be estimated by finding its percentage composition, digestibility, and relative heat value, and so from the market price calculating its cost per 100 heat units. We are now in a position to calculate the exact value of a ration to the animal and also its cost, and, moreover, we can, by noting the market prices of various suitable foodstuffs, see when it will be possible to replace one article of food by an equivalent amount of another of less cost.

As an example of the whole process take the ration fed to tram horses in the L.C.C. stables. This consists of: peas 2 lbs., oats 4 lbs., maize 8 lbs., and chaff from 1½ lbs. of oat straw, and 11½ lbs. of hay. From the accompanying table (Table V, *a*) we see the composition, digestibility, and heat value of this ration and can compare it with the standard requirements for horses averaging 900 lbs. weight.

We see that the L.C.C. ration more than fulfils all the standard requirements for moderate work, and the only remaining question is—can the cost be lessened? Suppose we substitute 2lb. of barley for 2lb. of oats, we see from the table (Table V, *b*) there are various losses and gains, but a net gain of heat producing power, no serious lowering of the nitrogenous ratio, and a saving in cost of 6/4½ a ton of the mixed corn. If on the other hand 2lb. bran is substituted for 2lb. oats, by a similar calculation we find the heat and work producing power is slightly less; the nitrogenous ratio (already quite good enough) is further unnecessarily improved, but the cost is now increased 9/1 per ton of corn. Thus barley would answer well as a substitute for 2lbs. of oats, whereas bran would be too costly and not so good. The saving of expense by using 2lbs. barley to replace an equal quantity of oats would, for a stud of 500 horses, amount to £363 per year, a not inconsiderable item.

And now, in conclusion, let me express the hope that this somewhat dry and technical paper may not be without interest to some members present, but that it may be useful in suggesting ways and means of effecting economies in foraging studs of horses without lessening the working efficiency and so may help to solve some of the problems which so often face those who have charge of such undertakings.

DEATH OF DR. D. A. GRESSWELL.

The State of Victoria has suffered an incalculable loss by the death of Dr. Dan Astley Gresswell, chairman of the Board of Public Health. He was unquestionably one of the most capable officers who ever administered an important department. He had a most comprehensive and detailed knowledge of everything pertaining to hygiene and public health; he worked indefatigably in the administration of his department; scrupulous and firm, but always courteous, he soon earned and held the esteem and respect of the whole community. He set before him an extremely high ideal of public duty and strove to realise it with extraordinary energy and enthusiasm. Dr. Gresswell was born on Sept. 11th, 1853, at Louth, Lincolnshire. He was one of the 12 sons of Mr. Dan Gresswell, a veterinary surgeon, who was widely known for his skill and scientific attainments and who did much to raise veterinary medicine to a higher and more scientific level. Dr. Gresswell was educated at Oxford, where he took his M.A. and M.D. degrees, his medical studies being carried on at St. Bartholomew's Hospital and School. He had a brilliant career at college, gaining the Radcliffe Travelling Fellowship. His thesis on the natural history of scarlet fever attracted considerable attention and is recognised as the authoritative work on the subject. He early turned his attention to hygiene and public health and obtained an appointment as assistant inspector of the Local Government Board. He was recommended by Sir Richard Thorne for the post of medical inspector of the new board of public health of Victoria and was appointed to that post in 1890, commencing duty on March 25th of that year. He immediately made exhaustive inquiries into the sanitary condition of Melbourne and of Victoria and made numerous recommendations which, though causing many protests from vested interests, have been practically carried into effect. He was really the author of numerous legislative measures, notably on food adulteration, meat supervision, and milk supervision, and spread broadcast through the State numerous wall sheets and papers on the prevention of influenza, typhoid fever, and other infectious and epidemic diseases. In 1894 he was appointed chairman as well as medical inspector of the board. He worked persistently and, in face of much opposition, with steadfast courage and tact to improve the health of Victoria, and to keep the State free from outbreaks of epidemic and infectious disease, and his efforts must have saved the community thousands of pounds. It was almost entirely due to his efforts that Victoria escaped the plague which played such havoc in the neighbouring States. He took a warm interest in the profession and was president of the Medical Society of Victoria and of the Victorian branch of the British Medical Association. Dr. Gresswell's health began to fail in November, 1898, when he had an attack of septic cholangitis which kept him from work till May, 1899. He seemed fairly well until last February when he had a similar and severe attack. He resumed duty in May but was obviously weak. On Nov. 23rd he was again attacked and gradually got weaker and died on Dec. 11th. The funeral was attended by a large number of prominent men, including the Premier, the Chief Secretary, a representative of the Governor, representatives of the medical societies and various public bodies, and many leading medical men. He leaves a widow but no children.—*Lancet.*

THE RESULTS OF TWO CASES OF INJECTION OF PARAFFIN.

By F. C. Wallis, F.R.C.S.Eng., Surgeon to Charing Cross Hospital, St. Marks's Hospital, and the Grosvenor Hospital.

Case I.—A single woman, aged 32 years, was sent to me by Sir Francis Laking on Nov. 2nd, 1904, because of considerable and increasing difficulty in getting the bowels to act. The history given was that the present condition had been gradually arrived at and the patient was getting thinner. The difficulty of procuring any action of the bowels was now considerable and was accompanied by slight loss of blood. There were a dull aching pain and feeling of weight in the rectum and some slight difficulty in passing urine. On examination the rectum was not in itself found to be the cause of the trouble, but a large tense swelling in Douglas's pouch was felt which was evidently causing the obstruction. Examination of the abdomen revealed a swelling in the right side of the hypogastrium. Aboves the pubes and to the left there was some hard,

rounded lumps to be felt. Dr. R. A. Gibbons saw the patient the same day and elicited the information that because of prolapse of the uterus paraffin wax had been injected into the broad ligaments two years previously. The patient's temperature was normal and up to the time she consulted me she had been carrying out the details of her ordinary daily life.

On examination per vaginam (under an anæsthetic) the vagina was found to be considerably invaded by the swelling felt per rectum, the cervix was high up, and around it various hard round lumps could be felt. The uterus was not fixed. The tumour was obviously one of three things; an ovarian cyst, a parovarian cyst, or some collection of fluid in the broad ligament the result of the paraffin injection. Whichever it was, the necessity for operation was somewhat urgent.

* * * *

The day after the second operation the temperature fell to normal and remained so. The abdominal swelling and tenderness rapidly diminished and at the end of a week, when the stitches were removed, the swelling had almost disappeared and there was hardly any tenderness. The patient left the nursing home to go to the seaside six weeks after the first operation, feeling and looking well, but there was still some tenderness under the right rectus on firm pressure.

Case 2.—A woman, aged 66 years, was admitted into St. Mark's Hospital under my care on April 11th, 1904. She gave the following history. For three or four years previously she had suffered from prolapse of the rectum, the bowel protruding about three inches. Late in January, 1904, she was admitted into a hospital where she underwent operation, apparently by the injection of paraffin wax into both ischio-rectal fossæ; she was in hospital six weeks altogether. A fortnight after leaving the hospital she "felt something burst behind" and noticed that her linen was covered with a white, waxy substance; since that time she had had a constant discharge from a small sinus in the right peri-anal region. The bowel had not prolapsed so much since the operation but she had suffered a good deal of pain in the back which was worse when sitting down.

* * * *

Whether the injection of paraffin into the broad ligament is ever advisable or even justifiable is a question upon which I should like a definite opinion from those who make a special study of the uterus and its appendages. The ultimate results in Case 1 were disastrous enough and there is no assurance that a recrudescence of the trouble may not occur at any time. Supposing that the paraffin is sterile at the time of injection, which is doubtful unless special precautions are taken, this is no guarantee that it will always remain so and, as these cases illustrate, it may possibly act as a culture medium in a part of the body where pyogenic micro-organisms always abound. The result in Case 2 is also unsatisfactory, and having regard to the excellent results obtained by other methods in cases of prolapsus ani I do not think that the injection of paraffin wax is to be advocated.

The injection of paraffin wax has been used for cases of incontinence after excision of the rectum, but the result is not a success, there cannot be any *control* obtained by this injection. The paraffin wax forms a number of lumps round the lumen of the bowel, which is partially occluded, but the contents of the bowel escape as readily as before between the lumps. These remarks are not meant in any way to detract from the merits of this treatment in certain cases. The good results obtained are well known. The injection of paraffin wax, however, like many other new treatments, has been taken up and used without discrimination, and unless this is checked a treatment which in proper cases produces excellent results may fall into disrepute.—*The Lancet.*

A TEAT CLAMP.

The accompanying sketch is that of a Teat Clamp made at my suggestion by Messrs. C. H. Huish and Co., 12 Red Lion Square, London, W.C. Its function is to prevent the escape of air or oxygen through the duct after injections in cases of milk fever.

The clamp having been adjusted to the teat, the practitioner has both his hands free to massage the injected quarter.

I can vouch for its utility in these cases, and I am confident that the results obtained from mammary injections are in proportion to the amount of massage applied.

LEWIS LLOYD, M.R.C.V.S.
Portadown.

ROYAL COUNTIES' VETERINARY MEDICAL ASSOCIATION.

The annual general meeting was held at the Great Western Hotel, Reading, on Friday, January 27th. The chair was taken at 2.45 p.m. by the President (Mr. H. C. Jagger, Bicester), and the members attending included Messrs. H. G. Simpson and R. C. Tennant, Windsor; J. P. S. Walker, of Oxford, hon. treasurer; Percy J. Simpson, Maidenhead, hon. sec.; A. L. Butters; J. C. Coleman, Swindon; W. G. Flanagan, Reading; E. C. Howard, Newbury; H. G. Lepper, Aylesbury; J. McKerlie, Hungerford; E. J. Mellett, Henley-on-Thames; James F. Simpson, Maidenhead; S. H. Slocock, Hounslow; Albert Wheatley, Reading; F. W. Wragg, E. Lionel Stroud, and Major Meredith, London, and the following visitors: Capt. Wright, A.V.D., Arborfield; Mr. Cross, Army Remount Department; and Mr. L. Mitchell and Dr. W. J. Maurice, Reading.

Letters and telegrams expressing regret at inability to attend the meeting were received from Profs. McCall and Pritchard, and Messrs. T. D. Hughes, Wm. Wilson, T. Powell, W. J. Mulvey, R. Porch, John Hatch, W. G. Wragg, John Varney, T. B. Goodall, James East, G J. Emerton, W. L. Harrison, J. S. Hurndall, E. Percival Owen, F. W. Hanks, S. Villar, R. H. Stephenson, J. H. Wilson and D. Wyllie.

The minutes of the last meeting having been confirmed were duly signed by the President.

The HON. SECRETARY produced the file of agenda papers relating to the meetings of the Association which he was instructed at the London meeting to have bound, and explained that they furnished an interesting record, beginning with the preliminary circular which called the meeting at which the Association was formed, and going on without a break for 21 years.

Mr. A. L. BUTTERS then presented his statement of accounts as auditor. It showed a balance brought forward of £34 9s. 3d., and subscriptions received to December, 1904, £30 9s. 6d., making a total income of £64 18s. 9d. The expenditure, which included a grant of ten guineas to the Victoria Benevolent Fund, and of two guineas to the Institute of Public Health, amounted to £23 17s. 4d., leaving a balance at bank of £41 1s. 5d. He congratulated the Association on the very excellent condition of its finances.

On the proposition of the Hon. Sec., seconded by Major Meredith, it was unanimously agreed to hold the next (summer) meeting of the Association at Maiden-

head, where several happy gatherings have taken place in previous years.

Compounding for Subscriptions.

Mr. E. L. Stroud moved, in accordance with notice:—"That any member may compound for his annual subscription by paying at once the sum of five guineas, in addition to his entrance fee, and that life subscriptions be put to capital." He said the system he proposed had worked very well in the Central Veterinary Medical Society, and he hoped a good many members would adopt the plan. It would put money in the Treasurer's hands, and the interest on the invested capital would help pay working expenses. In cases of emergency, should they arise, the Treasurer would be able to draw on the capital under a resolution. A good deal of correspondence would be saved, and he thought, further, that life members would take a greater interest in the Association.

Mr. Slocock seconded.

Mr. J. F. Simpson, in the course of a discussion which followed, observed that the system of compounding was a good one if instituted on the formation of a Society. He did not, however, like the idea of placing all that money to capital, and so, perhaps, out of reach for the purpose of granting subscriptions to benevolent institutions, etc. If Mr. Stroud could see his way to omit the latter clause of his proposition—"and that life subscriptions be put to capital"—he would support it, but otherwise he should feel obliged to vote against it.

Mr. Stroud pointed out that sometimes when an Association had a big balance in hand members were rather carried away, and inclined to vote it away. In cases of emergency they could draw on capital, if necessary.

The President could see it eventually becoming a society of life members with no current funds. The membership of the Central Society was about three times that of the Royal Counties' Association.

Mr. Wragg said the National had a membership of about 400, and only about eight members had paid the composition as life subscribers. He thought the first part of Mr. Stroud's proposition might very well be carried, but he totally disagreed with the latter.

Mr. Stroud could not see his way to withdraw the words suggested.

Mr. J. F. Simpson moved the omission of words after "entrance fee," and this was seconded by Mr. Wragg.

This amendment was defeated by 10 votes to six, and it was ultimately agreed, *nemine contradicente* to accept a suggestion by Mr. Walker, and supported by Mr. Flanagan, to leave the terms of subscription as they were.

Specimens and Cases.

Several post-mortem specimens and cases of interest came before the meeting.

The Hon. Sec. brought three specimens. The first was a fatty tumour, looking very like a bladder of lard, and weighing 4¾lbs, which he had taken from the mammary gland of a fox-terrier bitch he had had to destroy, the weight of the animal after the tumour was removed being 22lbs.

The next specimen he had not had time to examine microscopically, as it had been brought to him hurriedly by a cowman. There were a lot of little nodules on the membrane covering the cotyledons, looking suspiciously like tuberculosis. If so, it was interesting to find tuberculous lesions surrounding the cotyledons.

A further specimen was a hat-pin which he had successfully removed by cutting the head out of the œsophagus of a young kitten. The kitten was only about an inch longer than the pin which it had undoubtedly swallowed.

Mr. H. G. Simpson exhibited a neatly-mounted mouth of a horse which had been shot the day before the meeting. The horse, he said, was 21 years old, and to his own knowledge had never been "sick or sorry" during the past ten years, and had never lost condition. The peculiarity was the abnormal outgrowth of the gums, in granular tissue, which had displaced the roots of the teeth.

He also showed a specimen in spirits of a two-headed chicken.

Major Meredith showed bones displaying the effects of a very uncommon accident to a useful mare belonging to the Master of his Regimental Draghounds as she was attempting to take a gap in the hunting field. Colliding in her jump with a blackthorn stump, both condyles of the femur were knocked off the near stifle joint, but the tibia was left intact.

He further related that he was recently consulted about a charger, which was suffering from a bad temper. Looking up the animal's nostril he saw a piece of degenerate matter, and applying a little torsion extracted a polypus about nine inches long without using any instruments. He showed a drawing of the polypus, the fore part of which was fibrous and the bottom a cyst. The horse made no noise, even when galloped, nor was there any sloughing, and the hæmorrhage was very little. Since the removal of polypus the animal's temper had been quite good.

The President related a case in his practice where a horse sustained a similar bone-fracture to that exhibited by Major Meredith, through kicking out violently.

Mr. Tennant said he had seen cases of fractured pelvis due to violent muscular exertion and contraction, without a blow of any sort.

Mr. Slocock was inclined to think that in such cases as had been mentioned by the President, the fracture had taken place beforehand, without displacement, and that the subsequent muscular contraction brought about the displacement.

On the motion of the President, seconded by Mr. Tennant, Major Meredith, Mr. H. G. Simpson, and the Hon. Sec were thanked for bringing the morbid specimens referred to.

Mr. Wheatley showed a case of "hip-down" in a pony which he had that day driven 25 miles.

Maj. Meredith nominated, and Mr. Wheatley seconded, Capt. Wright for election at next meeting.

PRESIDENTIAL ADDRESS.

Mr. H. C. Jagger, Bicester.

Gentlemen,—Let the opening remarks of this short and I am afraid particularly uninteresting address be devoted to assuring you of my high sense of the honour you have done me by appointing me your President for the year 1905. It was a source of great pleasure to me at our last meeting at the Holborn Restaurant that my election should have been, I think, unanimous. I say I think, for one highly respected and influential member of our excellent Society gave me a rather anxious few moments by expressing a desire to first interrogate me on some mysterious subject, and set me busily hurrying through a retrospect of my past life in the endeavour to grasp which reprehensible item could possibly have leaked out. When, however, it proved to have reference only to a more regular attendance at the Society's meetings, the cold perspiration gave place to a more congenial condition of the epidermis, and chorion and dyspnœa to normal respiration. I quite appreciate the importance of making especial efforts to be present at the greater proportion of these local gatherings of our profession, and deplore my unfortunate but practically unavoidable absence on many occasions in the past. The immense amount of good which has been, and is being, done by societies of this sort must be patent to every one of us when we consider the objects for which they are established and carried on.

In the first place let us take the discussion of scientific subjects, the exhibition of interesting specimens of morbid anatomy, and the interchange of ideas on the best and most advantageous methods of carrying on our arduous and often anxious calling. How easy is it for the practitioner in the country, isolated possibly for many months from all his *confrères*, to trot along in his own particular groove and be almost satisfied with himself in his lethargy. What a fillip to his energy and desire for research must the listening to and discussing some paper of high merit brought forward by some perhaps more studious member of the profession. And on the other hand, what great interest to the townsman must be the experiences of the colleague engaged in a purely agricultural practice, with his details of affections and conditions known only to the other in text books and lecture notes.

The second great object I think we may take to be the immense weight given to any project by a combination of members into such a Society, whether it be in the form of a petition to the Government of the country for redress of injustice or better recognition of services, or of suggestions to the Council of the profession which might influence their decisions for the common good.

And, lastly, let us not omit the social side of these meetings which promote friendship and good feeling amongst us, without which we cannot hope to pull together as we ought. I prefer rather to confine myself to a few thoughts on the position and prospects of the profession, than to enter into its politics. I am not amongst those who take an altogether pessimistic view of our future, nor have I the remotest intention of apprenticing myself to a motor garage, but I regretfully accept the fact that our sphere of action has become already narrowed by the substitution of the motor car for the hack and carriage horse, and in some districts of the motor dray for the team.

It will be agreed on the other hand, I think, that we have not such acute cause for apprehension on the score of overcrowding as some of the other professions, and with general practice, A.V.D., and civil appointments open, I see nothing to deter the youthful aspirant from entering our ranks, provided he does so knowing that a decent competency is all he will get, and early retirement hardly the rule.

I will not weary you with comments on the social status of the veterinary surgeon, for the subject is already hackneyed Suffice it to say that if you find him hobnobbing with Lord Tom Noddy at luncheon you will most assuredly catch him supping with the Market gardener or Carrier, so as to be handy to the old mare colicked in the outhonse. The position may not suit all, but it is more of a private matter after all. Far more important is the position we hold professionally in the eyes of the public, and hold in some much to be deplored cases I venture to say far too cheaply. I allude especially to the positions taken up in contested cases in the law courts, where we occasionally hear evidence on one side or the other which it is difficult to accept in our own minds as purely divergence of honest opinion. There is no doubt that frequently cases do occur where real difference of opinion is admissible and to be expected, but is this not at times carried too far, and should it not be guarded against as likely to lower us as a trustworthy profession in the esteem of that public to whom we must look for our very existence?

Although fully recognising the strides we have made of late years in practically every department of our work, I think we should relax no effort in the future. If we compare ourselves with our medical brethren we shall see that we have circumstances which are both advantageous and disadvantageous to us, for while in their case they have hospitals and nursing homes in the immediate reach of almost every practitioner, even including the country, where urgent surgical cases can be promply dealt with and where absolutely aseptic operations can be performed by a competent staff always connected with the institution, we have nothing of this sort, with the exception of our few colleges, and we are generally obliged to do our best by ourselves, perhaps giving an anæsthetic and struggling with an intricate operation at the same time. This is not, I take it, calculated to foster delicacy of surgical skill. On the other hand we have the opportunity of endless post-mortems to guide us in our diagnosis of obscure internal diseases which are to a great extent denied the medical man.

The great field of study to my mind which presents itself for the rising generation is that of bacteriology, the combatting of specific diseases by perfected serums, and matters bearing so importantly on public health through our food supply, namely, meat and milk.

Gentlemen, I will conclude these few remarks with first an apology for their shortcomings, and then with an appeal to you all to supply us during the coming year with the materials for discussion—and the discussion of the materials—so that we may all benefit by the opinions and experiences of each other to the advance of our common science; and for my own part let me assure you of my zeal and endeavours to carry on the business of the Association to the best of my meagre abilities, always trusting implicitly to the help of our Secretary and Treasurer, of whom I know we are all justly proud.

The Hon. Sec. proposed, and Mr. H. G. Simpson seconded, a hearty vote of thanks to the President for his interesting address. Carried.

The Annual Dinner.

The same company sat down to the annual dinner in the Hotel, the repast being served in Mr. W. G. Flanagan's well-known style. They were joined by Dr. G. M. Wilcockson, Dr. Comber (Heckfield), Capt. Wright, Capt. Giles Ayres (Berks. I.Y.), Councillors A. H. Bull and Wm. Bonny, Messrs. Arthur C. Butler, E. King Deacon, etc.

After the repast had been enjoyed, the President submitted the toast of "The King," remarking that His Majesty had always displayed the greatest interest in the veterinary profession. Might he long reign over a happy and united people! (Applause).

Mr. J. F. Simpson gave "The Imperial Forces." He observed that upon the Navy, as our first line of defence, we must depend for the protection not only of the homeland but of our colonies and dependencies. In spite of all the criticisms recently published, the British Navy had come out well. With regard to the Army there was very good reason for some of the criticisms which had been heard latterly; but he thought that if it were not for the petty interference of civilians "Tommy Atkins" would be in a better position as regarded comfort than he was at the present time. The absurdities which were perpetrated upon the Army were notorious. The constant alterations in uniforms must raise a feeling of disgust—certainly in the minds of the officers. They had all observed the alterations effected in the home regiments. Army reform no doubt required attention, and some of the alterations about to be made might prove of the greatest benefit to the Army, but he thought that the continual and harrassing alterations which were being made by the civilian section of the War Office should have received more attention. (Hear, hear.) The veterinary profession were of course interested in the Army, because they had an Army Veterinary Department; and they had with them that day representatives of that Department. Changes had taken place in that Department within the last year which had probably brought benefit to some, but as in all changes where the majority

was to be benefited the minority probably suffered some inconvenience—perhaps loss of income, perhaps loss of early promotion. On the whole, however, he thought that their Army Veterinary Department was at the present time less discontented than most department of the Army were expected to be. He hoped that England might always have volunteers to serve her. Within the last few years the Yeomanry had particularly come to the front; and the inducements held out to them for service were certainly attractive. It was time that the length of their training had been increased; but the War Office, recognising that a greater claim was made upon the time of the yeoman, had agreed to allow to each yeoman £5 to enable him to mount himself properly, during the annual training. To his (the speaker's) mind that allowance was an exceedingly liberal one. (Hear, hear). There had been a suggestion that the numerical strength of the Yeomanry should be reduced; but he hoped that would not be carried out. In conclusion, Mr. Simpson touched on the great strength of the Infantry Volunteers, and also on the immense progress made in the training of the nation to arms, by the establishment of rifle clubs, and the permission of rifle ranges in many centres. (Applause.)

Major MEREDITH, who first replied, expressed regret that Mr. James Simpson had not touched upon the subject of the position of the veterinary profession in the Army, although he sat on the Commission. As a working member of the profession he could say that their first condition was better than the last. The Commission had a very high object, but he was sorry to say that its result had not been what they would like to see. Mr. Simpson said that the majority were satisfied and contented. If he had said the minority, and considered the views of those of intermediate rank he would have acquired the true feelings of the Army Veterinary Department, and would have seen that the majority were not satisfied. Nevertheless the Army Veterinary Department undoubtedly afforded a very fine opening to the profession, and he should be the last person in the world to advise a young man not to enter it.

Capt. G. AYRES expressed his pleasure at being present once more on the occasion of that dinner, especially as he was associated with their President all through the campaign in South Africa. Active service was the place to find a man's true character and his capacity for work, and there he discovered these qualities in their President.

Mr. LEPPER (ex-Major Bucks Yeomanry), Capt. Wright, Capt. Tennant (B. Battery, Hon. Artillery Company), and Lieut. Percy Simpson (Berks I.Y.), also replied to the toast.

Dr. WILCOCKSON proposed the toast of the evening in a neat speech. "The Veterinary Profession," he said, he had always regarded from his earliest days in the medical profession, as a sister profession, and admired them for the strides they had made in science. It was to their own genuine work in science during the past 20 years or so that their rapid progress had been due in, he might say, almost exact proportion with the advance of the Japanese as a nation, by their own efforts. Many strides had been made by both professions, especially in pathology and the study of tuberculosis, which were simply astonishing in the scientific world. The retirement of Mr. Cope, the P.V.O. to the Board of Agriculture, during the past year had caused general regret; but a good man had been appointed in his place in Mr. Stockman, from the Colonies, an appointment which he heard was very popular in the profession. (Hear, hear.) Another important event during the past year was the opening of the Liverpool University Veterinary School, which had been affiliated to the Royal College of Veterinary Surgeons. That opening of veterinary schools was, to his mind, of great importance to the profession of veterinary medicine, just as the opening of provincial schools had been a great help to medical men in the advancement of clinical study. From the opening of clinical schools at Liverpool, Durham, Leeds, and other centres medical students had derived great advantage, and they would no doubt find in the veterinary profession equally good results from the establishment of provincial schools. The affiliation of existing schools to Universities had been talked about, but he hoped that would take place and that in course of time veterinarians would get University degrees. (Hear, hear.) They might have to spend part of their time in the affiliated schools but then it would carry an Arts degree, because they must have men of culture and men who would advance their profession to one of the front ranks of all the professions in the country. He hoped that post-graduate courses of lectures would be instituted, because he held that students should not finish with the gain of a diploma, but having done with examinations should still pursue science. A diploma in public hygiene is to be granted by the Liverpool University and will be of great value in matters connected with public health. (Hear, hear.) He coupled with the toast the name of Mr. Wragg, whom he had known for many years as an honoured member of the veterinary profession.—(Applause).

Mr. WRAGG, as the senior member of the profession present, acknowledged the toast in fitting terms. Having referred to the retirement of Mr. Cope, who had done much for the profession and also for the agricultural population generally, he said there was a diversity of opinion about the affiliation of veterinary schools with the Universities, to which Dr. Wilcockson had referred. Some thought it would be a great thing, but time would prove. Some were old-fashioned enough to think that the private schools, which had existed for a century or more, were still capable of giving as good an education to their students as they could get at any University. For sixty years the veterinary profession, as an incorporated profession, had carried on its business, had educated their students, and—as Dr. Wilcockson had admitted—had made great strides during the last 20 years. That was all due to the existing schools. Another thing was that their private schools had been carried on entirely without assistance from the Government, while at the same time a student, to become a veterinary surgeon, must pass the examination of the Royal College. As regarded the post-graduate course he was sure they were all agreed that it would be a great advantage to young members, while every veterinary surgeon who took an interest in his profession was bound to remain a student as long as he lived. Mr. Wragg added that for the first time in the history of their profession they had received a legacy, the late Sir F. FitzWygram having bequeathed a sum of money, the interest of which was to be given in prizes.

Capt. WRIGHT proposed the toast of "Success to the Royal Counties' Veterinary Medical Association," and in doing so he spoke of the help the Association had been in helping on the issue of the new warrant to his Department.

The PRESIDENT, responding, observed that that Association was a very important one. All its meetings at which he had had the privilege of attending had been exceedingly pleasant, but he hoped that on future occasions they would have an opportunity of more fully discussing scientific subjects. He assured the members of his zeal in the interests of the Association. (Applause).

The toast of "The Medical Profession" was proposed by Mr. SLOCOCK, who said he was sure all veterinarians present fully appreciated the honour done them that night by the gentlemen of the sister profession who had joined them. The medical was one of the noblest professions, and they appreciated their work in the cause of humanity, and in the alleviation of pain and suffering.

The members of the veterinary profession followed them in a minor degree: and it was the earnest hope of them all that the alliance between the two professions should continue. He felt sure that the day would come when the medical profession would extend to them the hand of fellowship in a broader sense than ever before. If the members of the two professions worked together it would be for their mutual advantage and for the advantage of mankind. He had great pleasure in coupling with the toast the name of Dr. Maurice. (Applause.)

Dr. W. J. MAURICE returned thanks on his own behalf and also of the other members of his profession who had so much pleasure in being with them that evening.

The President and other members were obliged to leave to catch trains, and Mr. H. G. Simpson, as the senior vice-president, then took the chair; but before they left Mr. J. F. Simpson thanked Mr. Jagger—and also Mr. Wheatley—for their kindly and cordial hospitality.

The toast of "The Visitors" was given by Mr. Wheatley, and replied to by Dr. Comber and Mr. Bull.

The last toast—that of "The Executive Officers of the R.C.V.M.A," was submitted by Mr. Bonny in complimentary terms, and acknowledged by the Hon. Secretary, Mr. P. J. Simpson saying that the Association did not seek to make money, but only to pay its way and to help the Victoria and other benevolent funds, and they had always succeeded in both those objects. He trusted all the members would turn up at the next meeting, which had been fixed to be held at Maidenhead, and that they would have as enjoyable a time as they had spent on previous visits to that town. (Applause.)

Songs by Capt. Ayres, Mr. Bonny, and E. L. Stroud, and "anecdotes" by Dr. Wilcockson and Mr. J. F. Simpson, en ivened a very pleasaut evening. Mr. E. K. Deacon contributed the accompaniments.

HORSE-SICKNESS.

INOCULATION EXPERIMENTS.

The Transvaal Correspondent of *The South African News* writes to his paper:

Barberton, Dec. 28.—Dr. Theiler, P.V.O. of the Transvaal, interviewed to-day, stated that the method of inoculation against horse-sickness has been found. He said: In the last experiment I made out of 34 animals tested only one mule died of horse sickness and in view of such results one is inclined to believe that the preventive for which we have been searching is within reach but there are many difficulties in the way and one of these is to convince people that my mules are really salted. Inoculation against rinderpest did as much harm as good, and I am determined to work my experiments in such a way that from the beginning to the end they shall be a success. I believe these mules of mine are salted also against biliary fever, but a lot of horses and mules imported from Argentine have died of biliary fever, and people as you know say in such cases that they have died of dinkop. I want to safeguard myself against that. There is reason to believe that we shall also find a preventive against biliary fever, but the two diseases must not be confused as is generally done. I believe that next year, next season that is, we shall be able to begin to inoculate against horse-sickness, but I will tell you this at once that I am not going to allow any man who may chance to get hold of serum to go around inoculating promiscuously.

Dr. Theiler further said that Mr. Edwards had supplied to his department two horses, which he had inoculated with a preventive of his own, and which he considered were immune from horse sickness. The doctor said he was going to test them with virus as he did his own animals to try to give them horse sickness. In order that the conditions might be perfectly fair he would inoculate two of his own immune animals at the same time, so that there could be no doubt about the result. He mentioned this as he knew that Mr. Edwards had inoculated various animals in the district and the owners of these animals would naturally be interested. If Mr. Edwards had discovered a sure preventive he was entitled to full credit for his discovery. He would probably be able to let the result of the experiment be known in about a fortnight's time.

Asked as to whether he was satisfied as to the result of his inoculation in regard to horses. Dr. Theiler said that he had not been so successful with horses as with mules, for he had not had sufficient horses to experiment upon. So far the mortality amongst his inoculated horses had been about twelve per cent. There was a certain difference in susceptibility between horses and mules, but he felt quite confident that the difficulties he was now experiencing would be overcome. He intended to devote this season to a series of experiments, and he proposed to expose 50 animals in different parts of the country so that they would be able to see what proportion of relapses occurred.

Bacteriology in the Argentine.

It is reported that Mr. Tiblom, the Director of the Division of Ganaderia (live stock industry), Zoology and Sanitary Police of Animals in the Ministry of Agriculture, Argentine Republic, has resigned that post after having held it for eight years. The Buenos Ayres *Standard* states that the resignation is the result of differences between Mr. Tiblom and Professor Lignières, the Director of the Bacteriological Institute. Our Buenos Ayres contemporary adds: Soon after his accession to office, the Minister for Foreign Affairs initiated negotiations with the British Minister for the reopening of British ports to Argentine live stock upon the ground that foot-and-mouth disease had practically disappeared from the Republic. The announcement of this step induced Professor Lignières to send a letter for publication stating that the disease still existed in the country, that two bulls affected by it had been refused admission to the Rural Show in October, and that the British ports ought not to be reopened. The publication of this letter was considered by Mr. Tiblom as an act of indiscipline on the part of Professor Lignières, whose department is a dependency of the Division of Ganaderia, and that it was also, from its form, depressive of the authority of the National Government. He therefore addressed a letter to the Minister of Agriculture, complaining of the conduct of his subordinate, and asking that an investigation might be made by independent and competent scientific authorities as to the nature and value of different vaccines which Prof. Lignières offers for use. Mr. Tiblom subsequently resigned his position.

The Argentine Minister of Agriculture has appointed a committee of seven bacteriologists and others to ascertain the scientific value of the vaccines prepared by Prof. Lignières, and which are used as preventives of Tristeza (red murrain) and other diseases of animals. It will be remembered that Mr. Tiblom, who recently resigned the position of director of the live stock division of the Argentine Ministry, made certain charges as to the results of using these vaccines, which are sold at the Bacteriological Institute, of which Prof. Lignières is the head. The question of the efficacy or inefficacy of the specifics invented by Prof. Lignières constitutes the subject of the investigation, which it is stated has been solicitsd by Prof. Lignières as well as by Mr. Tiblom.—*Live Stock Journal.*

DISEASES OF ANIMALS ACTS 1894 TO 1903. SUMMARY OF RETURNS.

Period.		Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies. Cases Confirmed.		Sheep Scab.	Swine Fever.	
		Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Dogs.	Other	Out-breaks	Out-breaks.	Slaughtered *
GT. BRITAIN. Week ended Feb. 4		23	32	..	..	19	48	..	..	54	11	8
Corresponding week in	1904 ..	26	36	..	..	23	57	..	..	98	19	146
	1903 ..	16	27	..	..	22	45	..	..	91	19	68
	1902 ..	12	20	..	..	22	36	..	..	75	46	253
Total for 5 weeks, 1905		105	197	..	..	115	220	..	..	263	58	178
Corresponding period in	1904 ..	109	142	..	..	125	276	..	..	510	141	860
	1903 ..	77	122	..	..	94	197	..	..	476	144	736
	1902 ..	76	119	..	..	117	245	2	..	459	198	1285
Board of Agriculture and Fisheries, Feb. 7, 1905.												
IRELAND. Week ending Jan. 28		..	..	..	..		..	..	..	15	..	4
Corresponding Week in	1904 ..	..	..	..	..	..	..	..	..	51	2	65
	1903 ..	..	..	..	..	..	1	..	..	23	1	8
	1902 ..	..	..	..	..	..	..	..	..	46	4	26
Total for 4 weeks, 1905		..	..	..	..	2	4	..	..	75	3	18
Corresponding period in	1904 ..	..	..	..	..	1	1	..	..	109	9	237
	1903 ..	..	..	..	..	..	1	..	..	82	2	34
	1902 ..	..	..	..	..	2	2	..	..	124	12	181

Epizootic Lymphangitis, Week ending Jan. 14, 2 cases.

Department of Agriculture and Technical Instruction for Ireland, (Castle Street), Dublin, Feb. 2, 1905.

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection.

The London School of Tropical Medicine.

The new chairs of helminthology and protozoology at the London School of Tropical Medicine have been filled by the appointment of Mr. Robert Thomson Leiper to the former and Mr. W. S. Perrin to the latter. Mr. Leiper, who was selected from a list of thirty-seven candidates, had a very distinguished career at the University of Glasgow, where he graduated as M.B., B.Ch. In 1902, while still an undergraduate, he was appointed by the Senate University Research Student in the Embryological Department; he was also awarded a Carnegie Medical Research Scholarship For some time past he has been wholly engaged in helminthological study and research. Mr. W. S. Perrin, who has been appointed to the Chair of Protozoology, was a Scholar of Gonville and Caius College, Cambridge, and obtained a first class in both parts of the Natural Science Tripos. He was elected Shuttleworth Research Scholar of his college. Last spring he was selected by Professor Adam Sedwick to assist him in carrying out a scheme which he had long had in mind of establishing a school of workers at the protozoa in Cambridge. In pursuance of this purpose, Mr. Perrin has for some months past been studying parasitic protozoa under Dr. von Prowazek, assistant to Dr. Schaudinn in the Marine Zoological Station at Rovigno, near Trieste.—*B.M.J.*

"Veterinary Smith"—An Abortive Prosecution.

Before the Southampton Boro' Justices last week, Ralph Alexander Gould, of East Street, was summoned for practising at a veterinary surgeon, not being on the Register of Veterinary Surgeons, and not holding at the time of the passing of the Veterinary Surgeons Act, 1881, the certificate of the Highland and Agricultural Society of Scotland.

Mr. C. Lamport appeared to prosecute for the Royal College of Veterinary Surgeons.

Charles Elliott, of Magdalene Terrace, Trinity Road, said he had been making inquiries on behalf of the Royal College, and on the door of the defendant's forge was the inscription "Gould's Veterinary Forge." Witness knew that such a business was carried on there.

In reply to Mr. A. H. Emanuel, who defended, said he did not know what was on the defendant's cards, neither did he make inquiries as to whether veterinary surgeons attended at the defendant's forge.

Mr. W. J. Paul, rate collector, proved that defendant occupied the house in question and was rated for it. In reply to the Bench he said the place appeared to be a smithy.

Mr. Emanuel contended that there was nothing to show that his client was the Gould who carried on the business, nor did he know that there was anything to prevent a man who carried on the business of a shoeing smith from being assisted by veterinary surgeons, and if he were so assisted, from calling his forge a "veterinary forge." Mr. Gould by the inscription over his door did not describe himself as a veterinary surgeon, and the inscription was justified in that a veterinary surgeon of the name of Gould, a properly qualified man, attended there and practised in connection with the deft's business.

Mr. Lamport, in reply, contended that the defendant had made a representation to the public that the forge was conducted by a qualified veterinary surgeon, whereas that was not so. By analogy a man might as well set up a pill factory, and because he got a doctor to call there occasionally describe it as being conducted by a fully qualified medical man.

Deft. gave evidence in confirmation of the statement made by his solicitor.

John Hayward Gould, a veterinary surgeon, and defendant's brother, said he attended defendant's forge every day, except Sunday, whether there was work or not.

In reply to the cross-examination of Mr. Lamport, he said that he had a strong interest in the forge. He admitted he was not obliged to make these daily attendances, though he always did so.

The Magistrates, after a conference, announced that they were not prepared to convict. On the application of Mr. Lamport they agreed to state a case for appeal.

Mr. Emanuel asked for cost against the prosecutors, but no order was made as to costs.

ARMY VETERINARY DEPARTMENT.

Extract from *London Gazette*,

WAR OFFICE, PALL MALL, Feb. 3.

The undermentioned gentlemen to be Lieutenants :—J. W. Rainey, in succession to Vet.-Capt. R. W. Burke, F.R.C.V.S., retired; H. M. Williams, in succession to Vet.-Capt. J. G. O'Donel, deceased; A. S. Lawrie, in succession to Vet.-Maj. W. B. Spooner, deceased; K. McL. McKenzie, in succession to Lieut.-Col. C. Rutherford, F.R.C.V.S., C.M.G., promoted; J. S. Nimmo, in succession to Maj. D. C. Pallin, retired; J. A. Bosley, in succession to Lieut.-Col. K. Lees, F.R.C.V.S., promoted; B. H. Lane, in succession to Lieut.-Col. F. W. Forsdyke, promoted.

OBITUARY.

JOHN ROWBOTTOM FARRAR, M.R.C.V.S., Biggleswade. Graduated, Edin: Dec., 1888.

Mr. Farrar died from pneumonia at his residence, The Square, Biggleswade, Beds., on Saturday, February 4th.

CORRESPONDENCE.

METHOD AND RESULT.

Sir,

Since Lister introduced the antiseptic method into surgical practice great strides have been made in human surgery. In days gone by the infection or Pasteurian theory was out of the question. Still, if the theory was out the infection was in the hospital. The infection was conveyed to patient inside the hospital from its surroundings, or outside by the hospital surgeon using hospital instruments.

Old surgeons, such as Bryant, Gamgee, etc. who had occasion to operate on patients in their own homes before the pre-antiseptic days noted the great successes they had compared with those carried out in the hospital.

In olden times, the cow-leech, the farrier, the pig-gelder, the dog doctor, and the veterinary surgeon were very successful in the majority of operations without antiseptics, and the reason is because their animals were operated upon in filthy surroundings away from the situation of well trained or highly developed virus.

At the present time, as in the past, who has not seen ovariotomy carried out on the sow or bitch (one gentleman has stated that he spays cats with the dirty knife he has just been pruning his trees with without bad results), cryptorchotomy on the horse, spaying of cows and caponizing of fowls without a trace of antisepsis.

What has been the results? I opine they have been just as good, even if not better, than with elaborate modern paper methods.

What explanation between two sets of results, one with and the other without the strict method, can one offer?

In the professional papers of olden days and recent times, several very interesting cases of abdominal surgery performed by that humble and too often despised person—the country practitioner, have been recorded. They are al the more valuable because they are recorded not to advertise one's skill, but to benefit the profession. And let it be understood that many of these cases must have been, from the natural circumstances of the accident or injury, far from aseptic, either before, during and after the operation.

What were the results? And to what could one attribute success? Even by the old cow doctor of the eighteenth century, who knew nothing of classical anatomy and less of pathology, abdominal surgery, such as Cæsarean section, resection of bowel, gastrotomy or rumenotomy, pelvic herniotomy, etc., was frequently performed with, perhaps, just as great success as at the present day.

A recent writer advises that laparotomy should be made of much more use than is at the present, and states "provided modern antiseptic precautions are adopted rigorously and a satisfactory anæsthesia established, the risk to the patient of a *laparotomy alone* is even less than that involved in the amputation of a limb." and adds that the wound will heal, after the application with iodoform colloid, "*per primam* in the majority of cases."

What conclusions can we draw from two sets of facts : (1) that in pre-antiseptic days the abdominal cavity of the domesticated animals was frequently opened and often important organs removed with the greatest success ; and (2) that, in the present day of surgical mania, "the risk to the patient of a *laparotomy alone* is even less than that involved in the amputation of a limb"? Also, what conclusion can be drawn from the fact that where antiseptic precautions are strictly taken the *majority* of the wounds heal *per primam*? Why not all?

And what conclusions may we draw from the following methods on a given case resulting in total success?

In the olden days a case of impaction or stoppage of the bowels in the dog was treated by a dog fancier, kennel man, or groom by means of a dose of castor oil and a tallow candle, and in spite of this treatment it was "cured."

In a much later date, the same case was treated with plain water mixed with brains, and it still "got well."

By an elderly practitioner, the same case was treated with sodic chloride on its tail and it "recovered."

By the modern man, the same case was treated with laparotomy and squeezing the intestine in a sausage like manner, free of its contents and yet it was "a success."

All four methods of treatment of the same case were totally opposite, yet the result sought for and thus obtained was the same.

Truly what an advance the practice of medicine has made in these ultra scientific and technically skilful days! 'Tis wonderful!

(The italics in the quotation and not in the original are the writer's.) "ENQUIRER."

DISTEMPER.

Sir,

With your kind permission I should just like another word on this matter.

In reply to Mr. Gray's queries I will write that the cases I quoted were isolated *from one another*, but it does not follow that they were isolated cases.

In reply to his second query in which I am asked in a roundabout way whether I deny that the cases I quoted were *far advanced* ones. I write, certainly not necessarily *far* advanced ones, and not even necessarily *advanced ones*. There are degrees of advancement even in "cough" "broncho-pneumonia" and "discharge."

If Mr. Gray will now answer this query which I put to him, then perhaps "some advance would be made in the knowledge of the early clinical history of the disease?" The query is—what does Mr. Gray mean when he says in his paper "under *favourable circumstances* it is an eruptive malady so far as external clinical appearances go?"

I am glad to be supported by Mr. Sewell in my contention about the spots, especially with his long clinical experience. However I'll go on looking for those spots. Have had two more cases—in a collie and a bob-tailed sheep dog, but haven't seen any spots yet.—Yours faithfully,

G. MAYALL.

A VETERINARY M.P.

Sir,

I do not think at any time during the existence of the R.C.V.S. our profession has been so keen on taking steps for its own protection and further advancement as at present. Evidence of this is amply supplied each week by *The Record*, but a definite course of united action appears wanting. What we apparently require is a good leader with a sound policy such as would bring our various fighting forces into one harmonious whole, and directed towards a special object.

In a recent issue I drew attention to the unsatisfactory position of the veterinary inspectors of the Irish Agricultural Department; later, "Vigilant," "Scrutator," and "Onlooker" strike warning notes in connection with possible disadvantagecus changes in the position of the A.V.D., and "Vigilant" also instances the somewhat anomalous position of the veterinary element of the English Agricultural Department. (It may not be out of place to mention that the English and Irish Agricultural Departments take up the entire service of almost 100 veterinary surgeons).

At the opening of our various schools we usually hear the plaintive cry "veterinary education in Great Britain is crippled owing to lack of funds," and, further, "that the Government ought to subsidize these teaching institutions." At other times we read of serious complaints made by veterinary inspectors to local authorities as to the ridiculously inadequate remuneration they receive for arduous and important work; others direct attention to the absurdity and wasteful extravagance of appointing plumbers, bricklayers, and ex-policemen, as meat inspectors, and so on. These and many other complaints I have observed, but I failed to notice any really sensible suggestion or vital *movement* having for its object the removal of the causes of our grumblings.

Some considerable time ago I believe Mr. Fraser endeavoured to induce our Council to sanction a scheme which he propounded, and having for its object the return of a veterinary surgeon to Parliament; in this he failed, and more's the pity, because any person with the most meagre knowledge of the workings of Government departments must be well aware how powerful a Member of Parliament is when he seizes on, and sticks to a question of importance, giving it full ventilation in the House.

I think it was Professor M'Fadyean who threw cold water on Mr. Fraser's scheme, and if I rightly remember the Professor asked if it was really thought that the Government would discard the advice of their veterinary advisers and seek the good offices of a veterinary surgeon because he was elected a member of the House of Commons? I have always been unable to fathom the reasoning which led to the propounding of this poser by the learned Professor; I don't suppose any other member of the profession would dream of such a thing.

A veterinarian elected to the House of Commons would, of course. under existing circumstances, have to be a member of one of the various political parties of which it is composed, and would have to act with that party on general questions, but on matters of interest and pertaining to the veterinary profession he could develop his own policy, and, more thad that, probably carry his party with him; he could, for instance, propose an amendment to the address at the opening of Parliament or propose a reduction of some Minister's salary when the estimates came up for discussion, and draw attention to the necessity for giving substantial grants to our schools, and who could say what enormous benefits would accrue to the Brltish Empire if such men as M'Fadyean were enabled to carry on their scientific work untrammelled by the thought of cost?

As the votes for various departments in which we are concerned came before the House "our Member" could raise debates and expose our grievances—when Corporations sought power to carry out meat inspection and other matters of interest to us, their bills could be blocked until our Member enforced clauses satisfactory to our profession. An able, active, quick-witted earnest man would soon make himself felt, even in such an august body as the Imperial Parliament.

Some may say, what could one man do? and to these I would reply, Is not the British Empire and our whole history built upon the work of individuals acting independently and at different epochs? Does our own profession not give us numerous examples of what one earnest man can do for the common good? Others may think it would be better to use our influence with several M.P.'s rather than depend upon one; well, perhaps theoretically this sounds correct, practically it is absolutely fallacious. Up to date we have utterly failed to achieve any marked success in this way, and very few laymen could be found who would thoroughly sympathise with us and understand our aspirations, it is an easy matter to approach the ordinary M.P. who will readily promise his assistance, but rarely do we hear of any further action. Now if we had a specialist in the House, canvassing for the support of the ordinary member would then be of the greatest utility and we need only ask for votes in support of our representatives intended action.

And now, sir, I propose that immediate steps be taken to secure the return of a veterinary surgeon to Parliament at the next general election. I think it would be to our advantage to secure the return of an Irish Member, and as a member of the Irish party my reason for this is that he would never fail to secure the consent of forty members if he desired at any time to move the adjournment of the House in order to discuss a matter of "grave public importance," he would have the further advantage of always being in opposition, and it would be more to our benefit to have our member so placed.

Taking the probable term of Parliament as of five years duration, and paying our representative £300 a year, we would require £1,500, add to this £500 for political and other purposes, he would need £2,000. Are there 2,000 members of our profession willing to subscribe £1 each, or 1,000 willing to subscribe £2 each? If so, all else can be accomplished.

Personally I am prepared to subscribe to a fund having for its object the return of a V.S. to Parliament, irrespective of the party to which he may belong, or for what constituency he may be elected.

CURRENTE CALAMO.

NEWSPAPER ADVICE.

Sir,

By permitting the advertisement submitted herewith, do you think the "thoroughly qualified veterinary surgeon" referred to can have any respect for himself or the profession to which it is claimed he belongs?—Yours faithfully,

F. W. EMERY.

Belfast, Feb. 1st.

From *The News Letter*, Belfast, Jan. 28th.

"IF YOU GO TO THE "VET" at home he will charge you maybe a guinea for telling you what to do with that ailment in your live stock. We will tell you for no greater cost than that of looking in the *Belfast Weekly News* to read his reply Send an account of the trouble along to the Editor, and your question will be answered by a thoroughly qualified Veterinary Surgeon.—Donegall Street, Belfast."

[If the newspaper notice is not untrue we have in our ranks a man destitute of self-respect and ignorant of professional etiquette.—ED.].

COMMUNICATIONS AND PAPERS RECEIVED.—Sir E. Clarke, Capt. H. A. Sullivan, Messrs. J. da Costa, J. Alex. Todd, F. Spencer, H. C. Wilkie, G. Mayall, Burroughs, Wellcome & Co. "Young Prac-titioner."

The Agricultural Journal (Cape), *The Cape Times*, *The Times of India*, *The Daily Mirror*, *The Australasian*.

Original articles and reports should be written on one side only of the paper and authenticated by the names and addresses of the writers, not necessarily for publication.